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(19)



## (54) WASTE DISPOSAL CONTAINERS

(71) We, MUCON ENGINEERING COMPANY LIMITED, a British Company, of Winchester Road, Basingstoke, Hampshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to waste disposal containers.

In recent years the traditional dustbin or similar waste receptacle which is emptied at intervals has been to some extent replaced by disposable containers e.g. plastic or paper bags, which are removed when filled and replaced by a fresh clean bag. As well as reducing the amount of labour involved in refuse collection, the disposable container has hygienic advantages. However, in the supports which are at present employed to hold the container with its mouth open to receive the waste for disposal the lid which is provided to cover the container does not reliably form an effective seal against the escape of odours, or air borne contaminants from the container contents. They are thus ineffective in preventing the possible spread of germs and diseases when employed in hospitals, for example, or in other situations where hygiene is of major importance.

It is the object of the present invention to provide an improved holder for disposable flexible waste containers having a closure member which effectively seals the container mouth.

A holder in accordance with the invention comprises a support plate with a circular aperture, a fixed ring surrounding the aperture, a flexible tubular sleeve having one end secured to the ring and folded back on itself and with its other end secured to a rotatable ring mounted on the support plate coaxial with the fixed ring, the sleeve being of such a length that rotation of the rotatable ring twists the sleeve to form a flexible iris diaphragm-like closure across the aperture, and means for clamping a flexible bag-like container to the holder so that its open mouth lies around the periphery of the aper-

ture to allow the container to hang therefrom through the sleeve.

A preferred embodiment of the invention will now be described in detail by way of illustration and explanation and with reference to the accompanying drawings in which:—

Figure 1 shows a plan view of a holder in accordance with the invention.

Figure 2 shows a section on the line A—A in Figure 1, with a disposable sack supported by the holder with the sack mouth open, and

Figure 3 shows a view similar to Figure 2 with the sack mouth closed.

In the drawings a holder for a disposable sack for refuse comprises a support plate 1 having a tubular mounting member 2 terminating in legs 3 which are received in sockets 4 of a wall plate 5 for attachment to a stand or other rigid support, for example a house wall, with the support plate 1 horizontal. The support plate 1 has a circular aperture 6 cut through it which is surrounded by a dependent flange 7 which forms a rigid ring around the periphery of the aperture. One end of a flexible tubular sleeve 8 is attached to the ring 7, the sleeve being folded back inwardly on itself and its other end is attached to a second ring 9 mounted on the plate 1 adjacent to and concentric with the first-mentioned ring 7. The second ring 9 is carried by grooved rollers 10 mounted on the plate 1 in equispaced relation around the aperture, so that the ring 9 is freely rotatable for twisting the sleeve between an open position, in which it hangs from the supporting rings to form a multi-wall open-ended tube as described, and a closed position (shown diagrammatically in Fig. 3) in which it forms a diaphragm extending across and closing the aperture 6 in the support plate 1. The rollers 10 have coned surfaces which engage a frusto-conical part 11 of the ring 9. A radially outwardly extending strut 12 in which is mounted a handle 13, is fixed to the rotatable ring to serve as an operating means to facilitate its rotation.

The ring 7 also carries an upstanding sheet metal flange 14, the top edge of which is

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bent over inwardly to provide a rounded support 15 for the mouth of a sack to hang therefrom through the aperture 6 in the support plate 1. The outer surface of the part of the sack adjacent its mouth is folded outwardly over the flange 14 so that the peripheral edge of the sack mouth lies next to the support plate 1 and is retained thereon by releasable clamp means comprising a sheet metal ring-like member 16 pivoted on a bracket 17 on the support plate 1 so as to be rotatable into clamping contact with that part of the sack wall lying against the exterior surface of the flange 14 and secured by an over-centre clamp device 18 or other conventional means for tightening the member about the sack wall.

With the tubular sleeve 8 in its open position as shown in Figure 2 the sack S hangs from the edge 15 of the flange 14 through and below the aperture 6 in the support plate 1 and through the sleeve, and refuse can thus be deposited therein. By rotating the rotatable ring 9 with its handle 12 the flexible sleeve 8 is twisted into its diaphragm form and as it closes it progressively squeezes together the sack wall where it extends through the sleeve so that ultimately the sack mouth is completely closed as shown in Figure 3. The sack S can be re-opened simply by rotating the sleeve ring 9 in the opposite direction to release the sack mouth which will then be caused to open for the receipt of further refuse by the weight of its contents.

It will be appreciated that the inward pressure on the sack wall produced by the closed sleeve produces tight closure of the sack mouth preventing the movement of air therethrough so that any odours, gaseous effluvia, air borne bacteria and the like emanating from refuse within the sack are trapped.

When the sack is filled it may be removed by releasing the clamp 16 on the supporting flange 14 and opening the sleeve 8. The filled sack may then be replaced by a fresh sack.

The filled sack can be held suspended from the holder, while the mouth is sealed by heat sealing, tying, or other convenient means, by the grip of the sleeve after the clamp 16 is released and thereafter removed for disposal by opening the sleeve.

#### WHAT WE CLAIM IS:—

1. A holder comprising a support plate

with a circular aperture, a fixed ring surrounding the aperture, a flexible tubular sleeve having one end secured to the ring and folded back on itself and with its other end secured to a rotatable ring mounted on the support plate coaxial with the fixed ring, the sleeve being of such a length that rotation of the rotatable ring twists the sleeve to form a flexible iris diaphragm-like closure across the aperture, and means for clamping a flexible bag-like container to the holder so that its open mouth lies around the periphery of the aperture to allow the container to hang therefrom through the sleeve.

2. A holder according to claim 1 wherein the fixed ring is formed as a flange around the periphery of the aperture in the support plate, and the rotatable ring is carried by rollers mounted on the support plate around the aperture.

3. A holder according to claim 2 wherein the rollers have coned surfaces engaging a frusto-conical part of the rotatable ring.

4. A holder according to any of claims 1—3 wherein a radially outwardly extending strut supporting a handle is fixed to the rotatable ring to facilitate rotation thereof.

5. A holder according to any of claims 1—4 wherein the container clamping means comprises a flange carried by the fixed ring to support the container mouth and clamp means to releasably secure the container mouth to the flange.

6. A holder according to claim 5 wherein the clamp means comprises a ring-shaped member pivoted for movement into and out of a clamping position coaxial and surrounding the flange, a clamp device being provided on the member to tighten it about the flange.

7. A holder according to any of the preceding claims wherein the support plate has a mounting member terminating in legs engageable with a plate for mounting the support plate on a vertical surface.

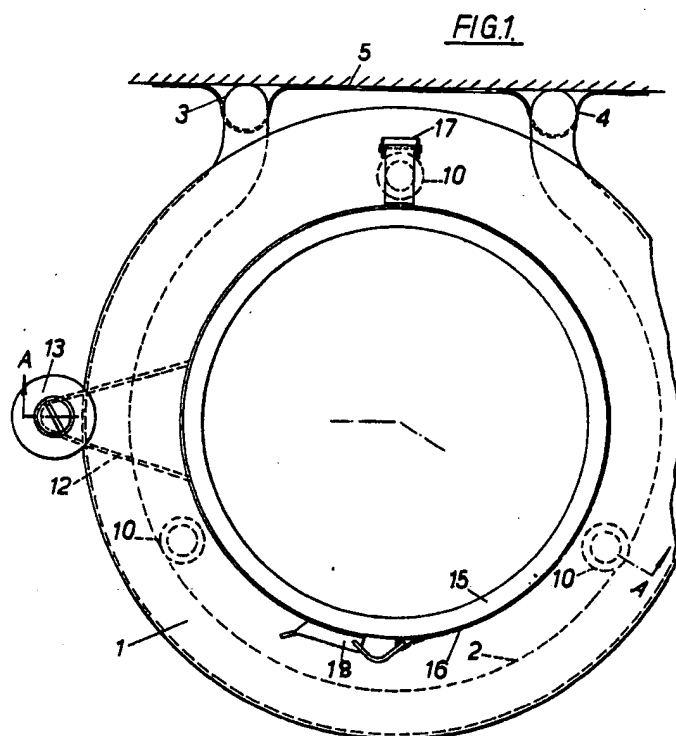
8. A holder constructed and arranged substantially as hereinbefore described and shown in the accompanying drawings.

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## COMPLETE SPECIFICATION

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Sheet 1



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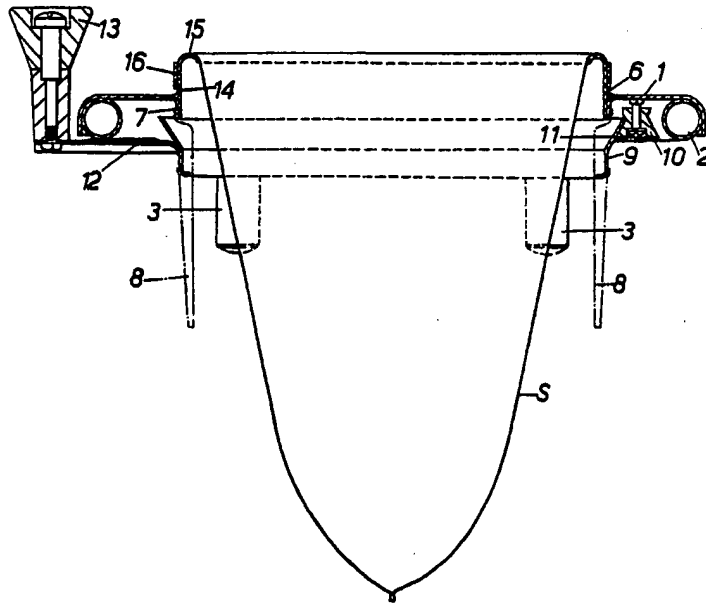
COMPLETE SPECIFICATION

3 SHEETS

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Sheet 2

FIG.2.



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Sheet 3

FIG.3.

